

**CPUC / CEC Workshop  
Reporting and Tracking GHG Emissions  
for a Load Based Cap**

**PG&E**

**Reporting Emissions and Estimating Emissions  
from Unspecified Purchases**

**Speakers**

- Gary Jeung – Energy Supply
- Greg San Martin – Environmental Policy

  
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06-18-07  
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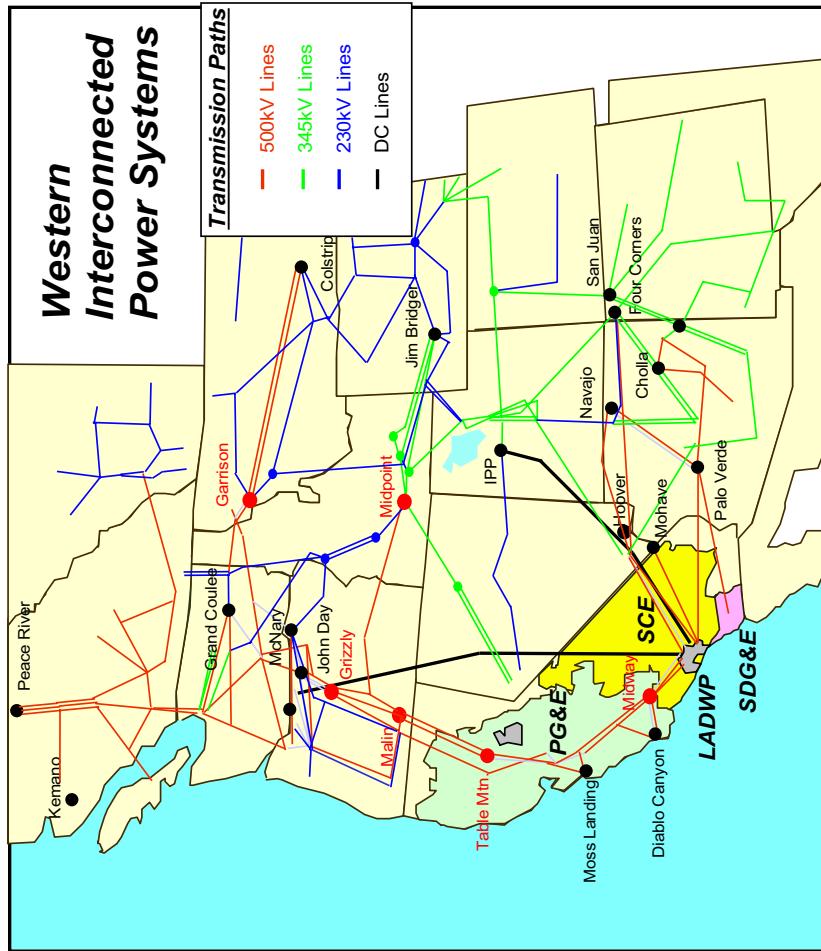
# Attribution of Emissions is Important to Commercial Energy Procurement Markets

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- How should CO<sub>2</sub> emissions be assigned to imports of electricity and procurement of unspecified energy?
  - System purchases important for reliable delivery of electricity
  - Currently used methodologies not adequate for future use

# Overview of the Western Grid

- Western electricity trades occur over a wide area.
- California requires imports to meet in-state electricity demand. Electricity may flow from regions with very different generation profiles than California.
  - 2005: 2,300 average MW delivered into CA from the NW, 4,400 average MW from SW, & 1,500 average MW from Intermountain Power Project (Utah).
- Transmission upgrades have reduced constraints between Northern and Southern CA
- Not possible to determine the physical origin of electricity served!



# Financial Tracking of Energy Procurement – Unit Specific vs. System

## Contract Types

**Unit specific** - Results from detailed negotiations with a counterparty, typically takes months to negotiate, seldom done for terms less than 4-5 yrs. Provisions for substitute (or system) energy can increase product performance.

**Hybrid** - Similar to unit specific, but provides seller with a larger portfolio greater flexibility to supply energy. Energy comes from a group of specified units, or can come from a mix of specified units (pool) and system energy. Similar provisions for substitute energy.

**System (unspecified)** - The default structure for shorter to intermediate term energy contracts. Much simpler contract terms and conditions. Necessary part of the business of serving load.

# Importance of System Energy

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**Estimate of future contribution of system energy is about the same or slightly increasing (currently about 30% for PG&E)**

- Suppliers becoming much more **product oriented** to match buyer needs
- Many sellers are not asset owners (their offered products with limited exceptions are system based). For example, commercial banks are precluded from owning units.
- Resource Adequacy as a stand alone product facilitates energy being bought and sold separately from the unit
- What PG&E needs to buy for its energy portfolio is not necessarily a good match with a unit specific energy contract
- Financially settled energy products have added to the efficiency of energy procurement (an outcome of this evolution is an increase in physical spot energy)

**Competitive energy markets lead to a wider variety of energy products with lower overall costs**

# Implications of Unit Specific Contracts

## Providing more unit specific contracts in the portfolio in order to track emissions may be contrary to least-cost procurement principles

**Price Paid** - Unit specific contracts covering the full portfolio are not practical and would be much more expensive than use of system power. Sellers seek to recover the full cost or market value of their assets. Buyers may not have a need for the full array of products associated with a unit.

**Procurement Plan Principles** - PG&E buys products to satisfy need and does not take on speculative positions by over-procuring.

**Economic Dispatch** - Even if the portfolio were to contain a greater level of unit specific contracts, the units would continue to be run based on least cost dispatch, which likely results in no less system energy because system energy will be purchased if less costly than energy costs from specific units in the portfolio.

**Environmental Benefits Unknown** – A specified unit could have higher emissions than system mix if the market heat rate is low.

# Lessons From Commercial Experience

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- Trend to more unspecified and system energy may present challenges to CO<sub>2</sub> tracking
- Unit specific contracts will not solve the attribution issue consistent with least-cost procurement
- New systems and tracking techniques needed to provide for accurate attribution
- Method used to date (CCAR) not adequate for mandatory reporting

# PG&E's Experience with CCAR Reporting

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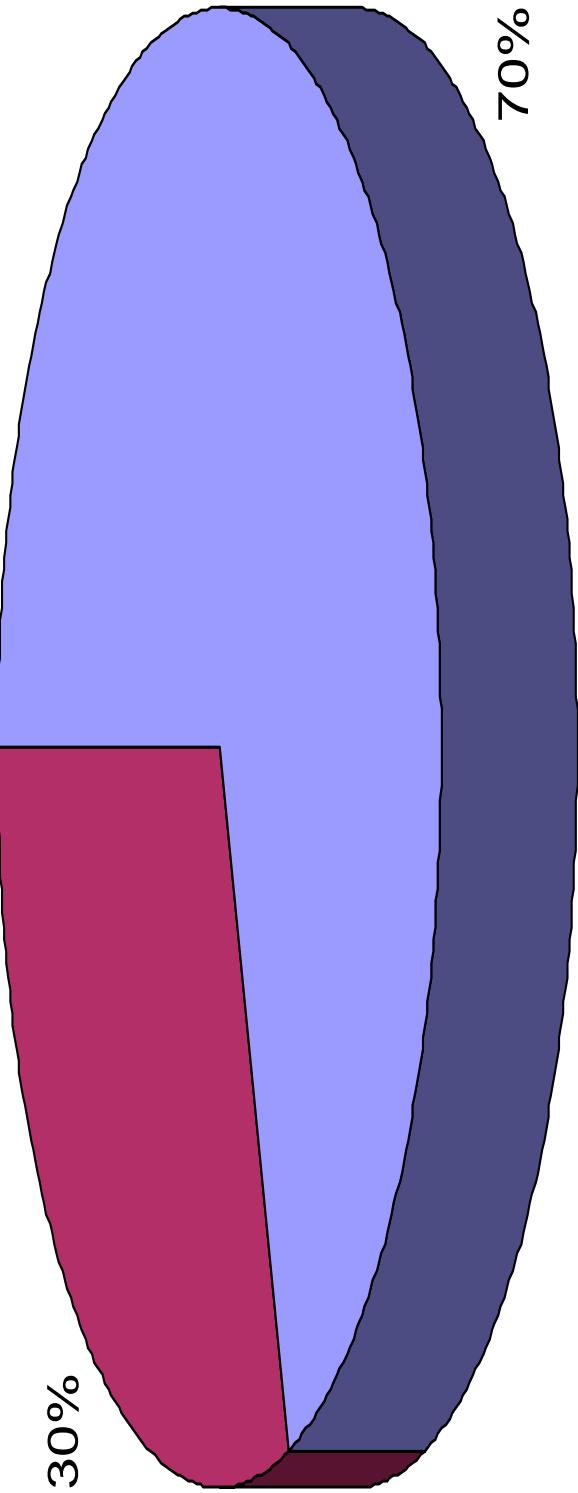
- PG&E is a Charter member of Registry. First IOU to join the Registry, certify its CO-2 emissions and certify all 6 GHG emissions
- Reporting yearly since 2002
- Recognized contributor to WRI/WBCSD's GHG Protocol & Project Protocol, US and IPCC emission reporting protocols and several Registry protocols

# CCAR Methodology for Unspecified Purchases

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- If source-specific or utility-specific emission factors are not known, the eGRID sub-region emission factor should be used.
- This is 804 lbs per MWh in the California portion of WECC.
- However, the LSEs who have reported to the CCAR have a combined, reported electric sector emissions intensity of 673 Lbs per MWh

# PG&E's Power Purchases by MWh from Contracts with EIA Numbers Specified and Unspecified



■ Purchases with IDs ■ Purchases with No IDs

- Though CCAR default is 804 lbs/MWh, PG&E used an emissions intensity of 1,100 lbs/MWh for unspecified purchases

# Lessons Learned From CCAR Reporting

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- The Registry's default emission factor has not been updated to reflect recent research and discussion re. CEC studies and SB 1368
- Existing reporting systems should be reviewed to reproduce the needed information
- Contract counter-parties providing power may need to be directly involved to confirm quantification methodology
- Contract specifics are relevant to attribution
- Further work is needed to refine the Power & Utility reporting protocol